

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An injection molding apparatus for making a molded part, comprising:

an injection molding machine for injecting molten resin, said injection molding machine including a screw cylinder having a tip, a nozzle at said tip and a threaded screw advanceable in said screw cylinder for injecting molten resin from said nozzle, said injection molding machine further having structurally associated therewith a stationary portion and a movable mold portion forming a mold parting line therebetween;

a non-metallic injection mold comprising a stationary cavity mold and a movable core mold having a first molten resin flow path therebetween, said first molten resin flow path having a terminal end portion distal from said nozzle, said movable core mold having a pair of ejector pins arranged therein for forceable separating said movable core mold from said first molten resin flow path;

a second molten resin flow path arranged proximate to said movable core mold and proximate said terminal end portion of said first molten resin flow path, ~~said second molten resin flow path being accessible to said first molten resin flow path by operation of an adjustable pressure valve arranged for alternately blocking and unblocking molten resin flow between said first molten resin flow path and said second molten resin flow path to accommodate a change in molding cavity pressure associated with a change in molten resin material introduced into said injection molding machine, said adjustable pressure relief valve being located on said mold parting line proximate to said first molten resin flow path and said second molten resin flow path, wherein said adjustable pressure relief valve being disposed to retain molten material in said first molten resin flow path when the molding cavity pressure is less than a predetermined level and, to release molten resin material from said first molten resin flow path~~

~~into said second molten resin flow path when molding cavity pressure exceeds said predetermined value; ; and~~

an adjustable pressure relief valve having a movable pin disposed on said mold parting line proximate to said terminal end portion of said first molten resin flow path and proximate said second molten resin flow path, said valve being operable between a blocking position and an unblocking position, at the blocking position molten resin flow from said first molten resin flow path to said second molten resin flow path is blocked by said pin, at the unblocking position molten resin flow from said first molten resin flow path to said second molten resin flow path is permitted by said pin, said valve moving from the blocked position to the unblocked position in response to a change in molding cavity pressure associated with a change in molten resin material introduced into said injection molding machine, said adjustable pressure relief valve retaining molten material in said first molten resin flow path when the molding cavity pressure is less than a predetermined value and releasing molten resin material from said first molten resin flow path into said second molten resin flow path when molding cavity pressure exceeds said predetermined value.

2. Cancelled.

3. (Original) The apparatus recited in claim 1 wherein said non-metallic injection mold comprises cast epoxy and thermo-set materials.

4. (Currently Amended) The apparatus recited in claim 1 wherein said ~~adjustable pressure relief valve comprises a~~ movable pin is actuated by a spring bias, said movable pin being adapted for movement between a first position that blocks said molten resin when said pressure is less than said predetermined ~~value; and, to~~ value, and a second position that releases said molten resin in said first molten resin flow path into a second molten resin flow path in fluid communications with said first molten resin flow path thereby relieving pressure in said first molten resin flow path.

5-6. Cancelled.

7. (Original) The apparatus recited in claim 1 wherein said non-metallic mold is made from a material selected from the group consisting of: a cast epoxy, stereo lithography, urethane, and silicone.

8. (Previously Presented) The apparatus recited in claim 4 wherein said adjustable pressure relief valve is adjustable to said predetermined value by adjusting a threaded screw supporting said spring bias biasing said movable pin.

9. (Previously Presented) The apparatus recited in claim 4 wherein said adjustable pressure relief valve is adjustable by changing said spring bias.

10. (Previously Presented) The apparatus recited in 1 wherein said adjustable pressure relief valve is adapted to automatically reset after said pressure in said first molten resin flow path falls below said predetermined value.